THE AMERICAN ARCHITECT AND BUILDING NEWS.

Copyright, 1876, JAMES R. OSGOOD & CO.

BOSTON, FEB. 5, 1876.

CONTENTS.

SUMMARY 41
"THE BRITISH WORKMAN" 42
FIRE-PROOF CONSTRUCTION 43
THE SEWAGE OF BOSTON 44
THE ILLUSTRATIONS 46
OTTIN'S SYSTEM OF DRAWING 47
THE BOOK OF AMERICAN INTERIORS 47
THE BOSTON ART CLUB'S EXHIBITION 48
CANADIAN NOTES 48

AN article in Scribner's Monthly for February, entitled "A Hundred Thousand Homes," raises expectations of an interesting account of how the homes are built, but expends itself mainly in showing how the money for them is provided, and only incidentally tells any thing about the houses themselves. Philadelphia is doubtless, as the article says, a city of homes. The ample breadth of the city, the low price of real estate, the moderate percentage expected in rent, all help to make it so; and we doubt if in any other great city, out of England at least, so large a proportion of families occupy separate dwellings. Even the system of ground rents established there, which might be expected to check building, does not seem to work in that way. The great problem in the distribution of city populations is to bring together as compactly as possible the various classes of inhabitants, their places of occupation and amusement, and their means of supply. The English and American distribution, which gives up the whole centres of the towns to business, and establishes the residences in rings or quarters more or less remote, has advantages in some respects, but is intolerably inconvenient and expensive. The system adopted in Paris and other great Continental cities, — Vienna, Berlin, Brussels, — which has been longer established in Scotland and Southern Italy, we believe, — meets the difficulty fairly. In its typical development it may be said to divide a city into measurably homogeneous layers, putting the business below, and the residences above, the wealthier beneath, and the poorer at the top; economizing space to the utmost, and providing each portion of the city with all classes of the population, and, in short, with all it needs for its daily life, thus avoiding an immense expenditure of time and money in moving the inhabitants back and forth. In Philadelphia at present the problem is met in a degree by the arrangement of the plan, which provides between the main streets secondary and narrower streets that give opportunity to the poorer inhabitants, and so open all quarters of the town to the various classes of inhabitants. While real estate is cheap and rents low, this facilitates the separate housing of families on which the article in Scribner's enlarges; but the article says that the price of real estate is continually rising, and, as it gets higher, even the secondary streets in the compact parts of the city will become too expensive for houses of people of small means, and Philadelphia will have, like other cities, to face the problem of a different massing of her population.

THE condition of the sewerage of New York has been known to be discreditable; but the recent report of Mr. Towle, the engineer in charge, shows it to be disgraceful and dangerous. Many of the old sewers have sunk in the middle, forming "elongated cesspools," which will not empty, and which, under the influence of a heavy flow of rain-water and the pressure of a high tide, are in danger of overflowing and even of bursting. The old sewers were so slightly built that the heavy jars of street traffic or the wash of violent rains have broken them in. In some of them the bottoms are found to be of wood instead of brick. Many are without man-holes, and so cannot be cleaned till they are broken open. "In some parts of the city," says Mr. Towle, "entire sections on the sites of old ponds and marshes have settled, carrying down the sewers and pavements together; and in excavating, the street pavements have been met with at different depths below the surface. In the present construction of the Centre-street sewer an old pavement has been found near the bottom of the trench; and in repairing the sewers in Grand Street and South Fifth Avenue they were found to be laid on a former street surface." He adds that he has on file complaints of fifty-three separate sewers in the district between Houston and Twenty-third Streets, east of Third Avenue. Considering that New York is not only more populous and wealthier, but by situation and the conformation of her surface more easily drained than any other city in the Union, this is bad enough.

MANY of our professional readers will remember the competition for the Chicago Court House, which attracted considerable attention a year or two ago. The affair was wretchedly mismanaged under the influence of local politics. A correspondent recalls the action of the jury of the common council, who judged of the plans; and says that premiums were awarded, "1st, to a German, to please the German political element; 2d, to an architect because his wife was niece to the Catholic bishop, this to please the Catholic political element; 3d, for a design that was so eccentric as to be impracticable, although it was fifty feet longer and fifty feet wider than the lot." The building was to occupy a whole block in the centre of the business part of Chicago, and was to furnish accommodation for both the city and the county courts. It was expected to cost three millions and upwards. Presently the authorities of the city and county were at loggerheads, and appointed each their independent architect. One of these had won no prize in the competition; the other was the author of the design which our correspondent characterizes as eccentric, and which, we believe, was in plan something like an embattled cross, with its arms turned to the corners of the lot, to receive two public footways which traversed the whole building diagonally, crossing in the centre. Until recently, we have understood, the whole affair was at a dead-lock, each architect being resolved to build on the half of the block controlled by his client — city or county — as much of his design as it would hold; one design having a central dome, and the other a tower. According to a late number of The Chicago Tribune, a compromise has been reached, the city architect assuming the charge of the interior, and the county architect that of the exterior. Chicago will judge for herself, whether she is to be congratulated on the loosening of the dead-lock or not.

ONE of the two statues which the State of Massachusetts proposes to present to the National Government, in accordance with the Act of Congress passed in 1865, is finished, and has been put on exhibition in the vestibule of the Athenæum at Boston. It is the statue of Gov. Winthrop, by Richard S. Greenough. Winthrop, the first governor of the Colony of Massachusetts Bay, born in England, landed in the province in 1630; and it is at the moment of this landing that the sculptor has chosen to represent him. He is shown just stepping from the end of the landing-plank, the action being explained by the stump to which his boat's painter is made fast, and the slight ripple of the water where the plank rests on the beach. The movement of the figure is unconstrained; it has something of the ease which distin-

guishes the work of the sculptor from that of the novice, — the simplicity and *ensemble* which an artist learns by practice and the study of good models. These qualities are enough to distinguish it from the mass of American sculpture, and are its chief claims to praise. There is no marked character or expression either in action or face. The drapery, with some small effort at naturalism, is slightly studied. It does not suggest the lines of the figure under it; its folds do not assist the action of the figure, and they compose badly. The folds on the right arm are especially awkward, and fairly cut into the flesh. There is very little modelling of the figure, it being almost hidden by the dress; but the hands, which are prominent, are not well shaped, and do not grasp; the lines of the lower legs are deficient in accentuation, the modelling what a French artist would call *mou*. The whole effect is that of a statue cleverly conceived, but negligently or imperfectly studied, and is inferior to that of Mr. Greenough's earlier statue of Winthrop, now in Mount Auburn Chapel.

The clay model of another statue intended for Washington has just been finished in Cincinnati. It is the equestrian statue of Gen. McPherson, ordered by the Army of the Tennessee; and is the work of a young Italian sculptor, Mr. Louis T. Rebisso. It is to be cast in bronze in Philadelphia, at a cost of forty thousand dollars. It is a colossal statue, the figure of the rider measuring eight feet high, and more; and represents Gen. McPherson suddenly reining in his horse, and earnestly scanning the distance of some field of battle. It is warmly praised by the Cincinnati Commercial for the simplicity and spirit of its design, and the skilful execution of the detail, as well as for its likeness. It is hoped that it will be finished in time to be "unveiled" in Washington, on the next Fourth of July.

"THE BRITISH WORKMAN."

The recurrent question of the British workman's way of serving or abusing his employer was stirred up afresh by the recent letters to the Building News from Mr. John P. Seddon, and the correspondence which they called out. The discussion is an endless one, and the questions of work and wages which arise in it extremely complicated; but they belong to all countries, and it is at once difficult and undesirable to keep them out of sight. The main fact seems to be clear here, as well as in England, that, whether their wages be rightly apportioned or not, there is a great tendency among workmen to avoid giving a good day's work in exchange for them.

From all sides comes the same story. Master mechanics tell us that a day's work does not with us average more than two-thirds what it did a few years ago; that the men are less capable as well as less industrious, and that they do not often nowadays take the trouble to more than half learn their trades. One man writes to the Building News that the workmen are absolutely enslaved by the trades-unions. This is not quite as true here as in England; but the trades-unions do doubtless seriously interfere with the liberties of a great portion of our workmen, and their energies are as much misapplied, it would seem here as there.

The serious trouble to the community is the deterioration in the quality of the work done, and in the efficiency of the workmen; and this notwithstanding that our best men can produce work as mechanically perfect as has ever been done. Not only is the average quality of work inferior both in solidity and nicety, but the activity of mind, the inventiveness and resource which the better ages have shown, and the habit of thoroughness, the complete knowledge of and identification with his trade, which characterized the old workman, is lacking in the modern one. His heart is no longer in his work; his interest is either dead, or absorbed in something else. The employer and employed, instead of working with a common zeal, are at variance, and work with different or inconsistent aims.

With the political and social questions to which these things lead, we have here no concern. The real fact to which they all point, and which is of extreme moment to everybody who depends upon the workmen, to employers and architects immediately, and not remotely to all whose wants are supplied by them, is that the workmen as a class are ceasing to respect their vocation. Politics, socialistic schemes, a hundred unreal questions and wild reforms, exercise active minds among them: their trades are to a great part of them only a distasteful means of getting their necessary bread and butter, and all their effort therefore is to make their labor as light and as lucrative as possible.

It is idle to lay the whole blame of this condition on the workmen themselves. Tendencies social, political, and commercial, which are common to all members of modern communities, the increasing struggle for wealth and luxury, the false standards of position, political whimseys, have much to do with it. But it is very unfortunate that the associations of workmen which exist in England and the United States devote themselves directly to aggravating these abuses. The only important objects which trades-unions pursue among us, so far as we know, are to increase the price of a day's work, and to diminish the amount of it. To diminish the amount of it means both logically and practically to impair its quality also; for it means not only to work less time, but to work with less effort, that is, with less care. We do not see any efforts making among the workmen's unions to improve their mastery of their trades, or to set up any good standard of skill among them, to distinguish the good from the bad workman. All their combined efforts are to acquire social or political power, to rise means with them to gain money or ease, not to improve their mastery of their own vocation; and the men who like to declaim about the dignity of labor seem really to be exercised mainly about the indignity of it.

It is probably useless to attempt to convince the unionists: they are likely to be convinced only by the decisions of experience, the factors in which are the law of supply and demand, and the ambition, pride, and cohesion of the opposing parties, which are at present a small element on the side of the employers, but a large one on that of the workmen.

Among the causes which may most strongly tend to increase the dissatisfaction of workmen with their work is the tendency, which immediately concerns architects and employers, to make all work as mechanical as possible. The whole complicated system by which mechanical work is divided and subdivided and distributed, the division of labor of which so much boast has been made, tends to narrow every man's duties down to a constant repetition of work which he can do without thought, and must do without interest. The British workman, laying brick with his hand in his trousers pocket, is not a bad type of the condition into which his faculties are educated by the present system. His brains might as well be there too, for any use that he finds for them in most of his work.

Of a piece with the division of labor, in a good degree the cause of it, is the use of machine-work; and the pestilent desire for all sorts of machine-made ornament, which has been the disease of the public and the torment of thoughtful designers of late days, is one of the wretchedest results of it. It is somewhat curious, by the way, how the opposition of workmen to the introduction of machinery, which reappears to this day in new forms and places, has always been on just the wrong basis. The desire of the world will doubtless find as much use for all the labor there is in it under one system as another; but the workmen have always objected that they were to be superseded by the machines. The real difficulty has been that they were assimilated to

their machines, and their work was made more and more trivial and mechanical. The workman who would have spent his day in cunningly forging some piece of metal now passes it in putting a series of blanks, precisely alike, under the same punch, and seeing them stamped into one unvarying form, with endless repetition. If the man were a trades-unionist, however, he should hail the change as at least a partial triumph of his principles; for it enables him to undertake his day's work with the least possible training, and get through it with the minimum effort of mind or body. Of course his attempt to shirk stultifies itself; and while the work grows less exacting it grows less capable of interesting any human mind.

We do not at all mean to say that this discouraging picture is a fair showing of the attitude of the working class among us; but it does represent tendencies which are very active. The waste of force to the community is enormous when all the concerted efforts of workmen as workmen are directed away from the improvement of their work, and even to its degradation, and spent on frivolous or mischievous ends; and to this is added the friction of misunderstandings and divided or opposing aims between employers and employed. It is the duty of architects not to disregard the interests of a class with which they are intimately connected, but to see to it that their influence is exerted as far as may be to amend these disorders. This trouble is too serious to be neglected, and it becomes every one who is concerned with workmen and their work to do what he can to remedy it. To architects it is as important for the sake of the work under their charge, as for the sake of the men who are to execute it, that they get the full benefit of the faculties of the workmen. Their influence is to be exerted, we think, by taking every means to interest the workman in his work, and to utilize his brains for it as well as his hands, to lay it before him in such shape that it shall stimulate and engage the activity which now runs to waste.

FIRE-PROOF CONSTRUCTION.

A PAPER PRESENTED AT THE SEVENTH ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS, BY N. H. HUTTON, FELLOW.

THE great conflagrations at Chicago and Boston, which in a few hours erased so many millions of dollars from the list of assets of this country, in some measure aroused the public attention to the necessity for some improvement in our methods of building-construction in relation to their powers of resistance to fire. The experiences of these great fires indicate plainly the utter inutility of any attempt to construct buildings capable of preserving uninjured themselves and their contents, when exposed to such heats as were there developed.

Taking into consideration the requirements of light, ventilation, convenience of access, and the multitude of other accessories which the necessities of the day demand, and without which no building would be considered useful for either business or domestic purposes, it may be assumed as a fixed fact, that it is not within our power to-day to construct a building which shall be *proof* against fire when it has attained the magnitude of these two great examples. It follows therefore, that, in order to result in any practical good, our efforts in this direction must tend to the development of methods of construction which will render such extensive fires impossible in the future. In any discussion of the best methods of accomplishing this most desirable end, it is evident that we can deal only in generalities. The necessities of each particular case, as to the value and character of the property to be protected, will indicate to some degree the extent to which money should be expended in securing protection against fire, and consequently affect the details, as to the best manner of accomplishing the desired result. All that the public can and should demand is that buildings should be so constructed that, during conflagration, they shall not unnecessarily endanger surrounding property, or the lives of those whose duty calls them to arrest the progress of the flames. These conditions may be assumed to be satisfied, when a building is so constructed, that a fire occurring within it can be confined to the compartment in which it originates, for a sufficient length of time to permit the application of the usual means for its extinction. In doing this we shall certainly have accomplished all that capitalists are likely to consent to do in this direction, or underwriters to ask. There can hardly be a doubt, not only in the case of the great fires herein alluded to, but in many lesser ones of daily occurrence, that the spread of the flames has been in no small degree due to the well-grounded fears of the firemen, which have prevented their close approach to the burning buildings, lest in their efforts to save property they might lose their lives (as so many have done) beneath the ruins of the flimsy structures, which await only the slightest disturbance of their normal condition to fall to the ground.

Our first step, then, would be to construct all walls of sufficient thickness to stand without the assistance of the floors; and, in order that by the falling-in of these latter the walls shall not be overturned, joists of any kind should never be embedded or inserted in the walls, but should be rested on continuous corbelling. The walls should moreover be carried several feet above the roof, and be provided with small openings through which water can be poured upon the adjacent roofs. Floors and stairways should be made as secure against fire as the circumstances of each case will justify; and in *every* case I think it can be shown that they can be made much more so than is now usual, at a very slight increase of cost, if any. The stairways, moreover, should *always* be built in a passage-way separated from the main compartments by partitions of fire-proof material. Hoistways for elevators, &c., should always be built of fire-proof material. Skylights through floors should never be left open. They can be covered with glass in two thicknesses, having an air space between; and some slight motion should be allowed by the frames in which the glass is fixed.

Doors of communication to the various floors, elevators, &c.. as well as the windows, may and should, as is often done, be made to some extent fire-proof; but, as we all know, they are generally left open at the critical moment. I do not propose to consider them, as I desire to call attention only to such means of hindering the progress of the flames, as would be entirely independent of any care and watchfulness used by the owners or occupants of the premises.

For many years, the use of iron, both cast and wrought, as a building material, has been rapidly on the increase, until of late years, or up to the time of the Chicago fire, it had attained the highest place on the list of fire-proof materials. Since the experiences of that great fire, where it so signally failed to withstand the heat, the general tendency seems to be to deny it any merit whatever as a material for fire-proof construction. While there is great reason to object to its recent extensive use as forming the main mass of large buildings intended to be fire-proof, the strongest arguments against the practice are not to be found in the fact that it failed to stand the tests it was there subjected to; for it may be fairly doubted if any known material would have successfully resisted under the same tests. The objections to its being made a "sole" dependence are found in the *uncertainty* of the material itself, fire or no fire. Notwithstanding our seventy years' experience in iron, we now really know very little with *certainty* as to its action under varying circumstances of stress. This is more especially true of cast-iron, for the reason that, however perfect our theories may be, we have no means in any given case, short of the destruction of the casting, of telling whether or not it fulfils the primary conditions on which all theory is based. We may allow large margins for "contingencies," and yet discover some day, in the fall of our structure, that the foundryman has introduced a "contingency" in the shape of a flaw, that destroys our building and our reputation at the same moment. Iron, therefore (and for the reason that it constantly deteriorates, and is expensive), should be used sparingly, cautiously, and only under circumstances to which no other material of equal durability will apply. In the form of thin sheets, and all the various forms of corrugated iron for floors and roofs, as a fire-proof material, it is utterly useless, as was markedly shown in the rapid destruction of the "Brooklyn Tabernacle."

An investigation of the most trustworthy accounts of the Chicago and Boston fires shows that in both cases there were two (and only two) materials that to any extent resisted the disintegrating action of the furious heats; and that these were "brick" and "mortar." Mr. Wight further informs us that, even where the bricks showed signs of failure, the mortar was found uninjured. It is mainly from these two abundant and cheap materials, I would suggest, that our future fire-proof construction is to be developed; and that, not by reverting to the massive vaults and

piers of a bygone day, but by using these materials in accordance with the teachings and experience of the science and facts of to-day.

I would propose, for the main masses of all walls, as well as floors, stairs, and flat roofs, wherever it is desirable to attain the highest degree of protection against fire, the use of hydraulic concrete of cement, sand, and stone; or the Béton Coignet, which is a concrete of cement and sand, mixed with a minimum of water; the walls of course to be faced with brick, or any kind of stone desired. These materials, if their use should become general, can be applied at half the cost of good brickwork, and will thus enable us to double the thickness of our walls without any additional expense. We obtain, moreover, damp-proof monolithic masses, without break or joint from top to bottom, — an advantage that every constructor will recognize. The walls should be built hollow; as this, while increasing their statical strength, affords a convenient space for the passage of gas and water pipes, and permits us to dispense with lathing to the walls. One finishing coat of plaster is all that is required; and, if the fine "Béton Coignet" is used, the surface can be at once finished in fresco. As before remarked, they should extend well above the roof, at least four or five feet.

Floors of twenty-five feet span, and capable of withstanding the severest strains, can be formed in single spans of "Béton Coignet" without endangering the stability of the walls, as arches of this homogeneous, jointless material act chiefly as beams, and exert very little horizontal thrust. Stairways of any degree of ornamentation can likewise be executed in this material, and should be built in with the walls as they progress. Partitions should be constructed of hollow bricks or some other light and fire-proof material. Possibly one of the best will be found a combination of gypsum and sawdust, which I have heard reported to have been tried with success in New York. For flat roofs I would suggest the use of flat arches of the "Béton Coignet" covered with a layer of "asphalt." Where the much-abused "mansard" style is adopted, it will be essential to use some form of framing of iron with covering of slate, — Béton or terra cotta: the latter I should think preferable.

In such cases as forbid the use of the system of single span arches for flooring, wrought-iron beams carrying arches of concrete would seem to be the next best method. These should be supported on continuous corbelling, thrown out from the walls as they are built. In the use of beams for such purposes I would call attention to a form of beam used in Europe, but not, in so far as I am aware, as yet introduced in this country. It is called after its inventor the "Zorée girder," and is shaped very much like an "A" without the cross-bar. Some experiments made on these beams during the Paris exposition are reported as showing that one of these beams 4¾ in. deep, weighing 9.5 lbs. per ft., gave equal strength and stiffness with I beams 8¼ in. deep, weighing 16.9 lbs. per ft. If this be true, the great advantage to be derived from the use of this form is evident. Their shape undoubtedly offers the advantage of not requiring lateral support or stiffening, without which the I beams are comparatively weak and should never be used. Where iron columns are used, they should be double, having a space of an inch or two between, filled with plaster or cement. A recent invention consists in casting the columns with "slots," through which an interior filling of cement is forced, forming rough keys for a coating of plaster or cement which is made to envelop the whole column.[1]

Stairways, if not of masonry or concrete, should be of iron, for manifest reasons; the absolute necessity of their being preserved uninjured, to render possible the escape of any persons caught in the upper portions while fire is raging below, being not the least among the many.

These remarks, though especially intended to apply to public buildings and those used for business and manufacturing purposes, apply equally to dwellings used exclusively for domestic purposes. I feel confident that if the experiment is once tried, of building really substantial dwellings of the materials I have referred to, none others will thereafter be constructed. Aside from their safety against fire, the immensely increased comfort and health, the saving in fuel, and cost of repairs, insurance, &c., will forever recommend them alike to capitalist and housekeeper. Should it be deemed impracticable or unremunerative to build as I have described (though I claim that a trial will show here, as it has done in Europe, that the first cost of this kind of construction is hardly any in excess of the usual flimsy methods), a great deal can be done in the way of improvement on the present styles, without any radical change in the general methods or material.

[1] Mr. Hutton's paper was read before the publication of Mr. Wight's invention for a fire-proof column. — Ed.

In the South of Europe, and I believe also in France, much of their immunity from the ravages of wide-spread conflagration is said to be due to the hardness of the material used for plastering, and the very thorough and efficient manner in which it is done. We know that both lime and gypsum are low conductors of heat; and it has occurred to me, that if we could obtain and use freely to cover the wooden portions of our dwellings an inexpensive material for plaster that would be so dense and strong as to permit its use in thick coats, without danger of its being injured or broken by concussion, we could thereby effect at no additional cost a very considerable degree of protection against the rapid spread of fire. This material has, I think, been discovered in the "selenitic" method of Col. Scott of the English engineers, by which he makes out of ordinary lime, by the admixture of a small quantity of the sulphate, generally in the form of gypsum, a cement which excels in strength and hardness the celebrated "Portland" cement. This prepared lime forms so hard a mortar that bricks joined together with it will separate by fracture of the bricks, rather than through the mortar joint. I would therefore suggest for use, in even the cheapest houses, very heavy coats of this mortar in place of the ordinary kind used for plastering, and that all exposed joists and beams be incased in it. The "stopping-off" with this material at each floor level of all wooden partitions would also be an undoubted advantage. One of the greatest sources of danger from fire in our ordinary dwellings arises from the defective construction of hearths. These should always be formed over arches of masonry or concrete; and the greatest care should be exercised to see that the trimming joists do not approach too near the fireplace or flue.

For roof coverings and damp-proof courses, as well as for floors where appropriate, one of the most invaluable articles is the "European asphalt." This material is entirely waterproof; and not only fireproof, but, when used as a floor, it has been known to extinguish a fire burning below it, by falling on and smothering it. This may appear singular conduct for a "bituminous" substance, but we have ample proof of its being true. In one case in Paris, the stables of one of the principal omnibus companies had a floor covered with this material to prevent the smell of the stable from penetrating through from below; and on *five* different occasions it delayed the progress of the flames arising from the burning hay, until means of extrication could be applied.

THE SEWAGE OF BOSTON.

Messrs. E. S. Chesbrough, C.E., of Chicago; Moses Lane, C.E., of Milwaukee; and Charles F. Folsom, M.D., of Boston (Secretary of the State Board of Health), — have submitted to the city government of Boston a project for a system of main sewerage, and an accompanying map.

The system is divided into two departments, divided by Charles River and the harbor. The drainage of the city proper is to be supplied by a sewer running from Cottage Farm (about half way between Boston and Brookline, on the south side of Charles River), following a nearly straight line across the mouth of the Neponset River to Squantum, and thence to the eastern end of Moon Island.

The main drain of the northern section begins at Charles River, opposite the first, runs west of Cambridge and Charlestown across the Mystic River in the same general direction, then turns in a south-easterly direction, crossing Breed's Island, and delivering at Point Shirley, opposite the south-western end of Deer Island.

Both of these sewers are to be large, and are to be laid at a sufficient depth to furnish an ample outfall for the drainage of all of the low lands which will in any reasonable computation of future growth be occupied as city area.

In order to secure a sufficient depth of these main sewers, each one is to be supplied with a pumping-station (that at Dorchester Bay having three engines of 145 horse power each) where the sewage will be lifted high enough to flow into Massachusetts Bay at Moon Island at a point eight feet above low-water mark. The pumping-station on Breed's Island is to have two engines of 145 horse power each. The lift here will be from twenty to thirty-three feet.

Each of these main sewers crosses a considerable stream, Mystic River and the mouth of Neponset River; in the latter case by a siphon six feet in diameter, and fifteen hundred feet long. These sewers are to be, at their outlets, in one case nine feet in diameter, and in the other twelve feet in diameter (or their equivalents).

These mains and their appurtenances being supplied, and provision being made for the working of their pumping engines, the difficult question of the drainage of Boston will be relieved of its

embarrassments, and it will have all the advantages of a city situated entirely on high ground and with satisfactory and remote points of outfall.

We hesitate, on a single week's consideration of this intricate subject, to criticise the action of a commission so eminently well fitted for the duty with which it has been intrusted, especially in view of the great experience and well-earned reputation of Mr. Chesbrough. With all the facts before them, and with ample means for the development of the various questions arising, it is fair to presume that they have proposed what seemed to them the wisest plan, and that they have been better situated, and are better qualified to say what plan would be the wisest, than any one else is. At the same time the enormous cost of this work leads one to wonder whether it might not be in some way modified in the interest of economy. The main lines and their main branches alone are to cost about six and one-half million dollars. Once made, these lines would enable the city of Boston to adopt such a system of sewerage as would purify it absolutely; and certainly no necessary cost should be an obstacle to the accomplishment of such a result.

But it seems to us, at first glance, that it would be possible so to order the sanitary government of the city, as to get on with less outlay. The great fouling of the city drainage comes, no doubt, from the street-wash. So prominent is this element that it is often said by English authorities that the sewage flowing from towns where water-closets are not used at all is quite as foul and in every way objectionable as that of London itself. It would certainly be possible, and in every way advantageous, to adopt such a system of street-paving and street-sweeping as would withhold nearly all of this source of impurity from the sewers. Where stable-manure is worth eight dollars per cord, and where there is a semi-pauper element in the population, the system in vogue in the city of London might certainly be applied without material cost, thus saving the country a very great loss of fertilizing matter which under the plan proposed must necessarily be washed into the sea, and permanently removed from the soil that produced it.

It becomes, then, a question whether the necessary street-wash and the drainage of the houses themselves might not be removed separately in connection with the water of light rainfalls, — the great volume of water of heavy storms flowing directly into the river or harbor in a sufficiently pure condition to do no harm. Perhaps this is not practicable nor advisable; but if such a modification of the system is available, or if it would suffice even for the next half century, the great economy in its construction is a strong argument for its adoption. We have no reason to suppose that this view of the case was not carefully considered by the commission; and, if they have decided against it, they have doubtless done so with good reason. It is mentioned here merely as the only serious objection that occurs to us against the adoption of a system which has, so far as we can see, no drawback save its cost.

The commission's report, which though short is carefully prepared, is accompanied with an appendix containing much information valuable to architects and engineers interested in sanitary questions. We extract from it the following instructive quotations: —

As an instance of the way in which the sanitary question is so frequently handled by municipal governments, it is stated that "The street-gullies for the surface water are located by the Street Department, must be connected with the sewers by the Sewer Department, and are emptied from time to time by the Health Department (not the Board of Health), — a complication which entails many evils, and which should be done away with. Under the present system, tide-locked sewers are used. In one section (the Back Bay and Church Street districts) these sewers are large enough to receive the greatest rainfall ever known in Boston though occurring at high tide. In such cases, "there is always a large amount of the most offensive and deleterious gases present, which *can* pass under any circumstances through any water-trap, to some extent. Second, the rapid rise of the sewage in the sewers, when they are closed by the tide, and especially if there be a heavy rain at the same time, compresses the gases to such an extent that they *must* force their way through the water-traps, provided there be not free ventilation, as there generally is not in Boston. The difficulty is especially great here, as the houses are of such various heights that it is difficult, in most cases, for one man to use his rain-water spouts as ventilators, without endangering the sleeping-rooms of his own or his neighbor's house.

"The large sewer running through Canal and Haymarket Streets, and having outlets on both sides of the city, was found last July to have a solid deposit five feet deep, so hard that it was difficult to thrust a pole through it. It cannot be cleaned satisfactorily, as it lies so low that workmen can enter it only at or near low tide. No systematic attempt, therefore, is made to clear it further than to dam one end, or to dig holes through the deposit under the manholes, and thus allow a partial scouring to take place. It is one of the old square wooden sewers, and is also described as a type of a class.

"Considered with reference to their outlets, it is certainly a very serious objection, in a sanitary point of view, that twenty million gallons of sewage are discharged at forty different points completely skirting our city, and polluting the atmosphere throughout most of its length and breadth.

"Without underrating the danger and discomforts arising from the present condition of our sewerage, it would be a great omission not to state that, in many cases, bad smells which have been attributed to the sewers really arise from defects in the arrangements belonging to the houses.

. . . . . .

The following is especially important for the consideration of architects: —

"In the house-drains themselves, the most common faults are these: —

"1st, That they are made of pervious or ill-jointed material, allowing contamination of soil, and afterwards of the air. They may, under some circumstances, pollute the water-supply, or defile the air distributed over the house by the furnace.

"2d, That they are often made of lead pipe, which often becomes corroded, and finally perforated, thereby allowing the discharge of sewer gases. Dr. Fergus of Glasgow, who has investigated this subject minutely, has known perforation to occur in lead pipes within three months after they had been laid."

"3d, That they are often broken close to the house-walls, or even within the walls themselves, in the made land, from "settling," — a process which has been known to continue in Boston for at least a dozen years. This is an evil which is not usually detected early, often not until the sewage has soaked through the cellar-walls, and not unfrequently exists when not suspected by the occupants of the house.

"4th, That they may be badly connected with the main sewer in the street, or broken at the same point by the settling of the land.

"5th, That they often are laid under the floors of the cellars of the houses, thereby increasing the risk when any imperfections exist.

"In the water-closets and wash-basins, trapping is often incomplete, and ventilation very deficient or entirely wanting.

"Finally, wet cellars in Boston are often due to the settling of the land in the yards, whereby the surface-water sinks into the soil instead of running off by the drains.

"Cesspools, at least in cities, should always be tightly cemented, and inspected by an official employed by the city, after each emptying, as is done in Paris. In such case they are not nuisances, if the contents are emptied by the pneumatic process, and removed to a sufficient distance. It is difficult, however, if not often impossible, to make cemented walls perfectly tight; and all such temporary arrangements should be abolished by law as fast as sewers are introduced. Nor is filling with earth sufficient; but it should be done with brick and cement, to prevent rat-holes, which are channels of communication for foul gases to the houses. How many of them still exist in Boston, it is impossible to say, but they are to be found in some of our oldest streets."

Concerning the made lands on which so much of Boston is built, and which have their counterpart in many other cities, mischievous effects are ascribed to the following causes: —

"1st, To the immediate contiguity of large areas of moist surface, bare at low tide, and covered with an ever-renewing layer of sewage.

"2d, To the bad character of the sewer gases, and to the fact that, in manner already explained, they must be constantly escaping in greater or less quantity, a large part of the time, into some of our houses.

"3d, To the breaking of the house-drains caused by the land settling, while the houses built upon piles remain fixed. This is unquestionably a fruitful source of mischief; but it may be obviated by a very simple contrivance, namely, by leaving a small manhole for inspection close to the outside of the cellar-wall, from the drain up to the surface of the ground. In this way any leakage would be readily detected; and the hole could be filled in winter with straw or some similar substance, to prevent freezing."

The defects of the present system are thus stated: —

"1st, We cannot get our refuse always from our house-drains to our sewers, because the latter may not only be full themselves at high tide, but they may even force the sewage up our drains into our houses.

"2d, We do not empty our sewers promptly, because the tide or the tide-gates prevent it. In such case, the sewage being stagnant, a precipitate falls to the bottom, which the slow and gradual emptying of the sewers, as the tide falls, does not produce scour enough to remove. This deposit remains with little change in some places for many months.

"3d, With our refuse, which is of an especially foul character, once at the outlets of the sewers, it is again delayed, there to decompose and contaminate the air.

"As a result of this failure to carry out the cardinal rule of sewerage, we are obliged to neglect the second rule, which is nearly as important, namely, ventilation of the sewers; for the gases are often so foul that we cannot allow them to escape without causing a nuisance; and we compromise the matter by closing all the vents that we can, with the certainty of poisoning the air of our houses."

The commission emphasizes the following statement:—

"*The sewage should start from the houses, and go in a continuous current without stopping until it reaches its destination, either in deep water or upon the land.*"

They close the report with these recommendations:—

"1st, That soil-pipes be carried through the roofs to a point two feet above them, and not near chimneys or windows; and that they have on their tops some approved automatic ventilator, one of the best of which is Capt. Liernur's modification of St. Martin's, originally proposed to the French Academy in 1788. Ventilating pipes may pass into chimneys if the latter are always kept hot.

"2d, That rain-water spouts be untrapped, and discharge into the sewers, *provided that their upper ends be remote from windows or the tops of chimneys communicating with rooms occupied by human beings.*

"3d, That house-drains be made free from the faults mentioned on a previous page.

"4th, That there be inspectors appointed, whose sole business it shall be to see that house-drains are properly constructed and kept in order.

"5th, That no new houses be occupied until they have been properly inspected, and their drains have been found satisfactory.

"6th, That an intercepting sewer, with branches and pumping-stations, be constructed according to the plans already given; the necessary modifications of the old sewers to be determined as the work proceeds.

"7th, That the means recommended for flushing be freely used, and the sewers be kept as clean as possible.

"8th, That the new sewers, and also many of the older ones, as they become clean, be ventilated by free openings, the positions of which are to be regulated by experience."

Boston is certainly to be congratulated, no matter what may be the result of the investigations of this commission, upon having had its sewerage peculiarities so carefully studied, and its direct and collateral issues so intelligently placed before its people.

THE ILLUSTRATIONS.

PULPIT AND SCREEN IN THE OLD SOUTH CHURCH. MESSRS. CUMMINGS AND SEARS, ARCHITECTS.

This is a wooden pulpit enclosed on three sides by a wooden screen, and flanked by doorways opening into two vestibules. This work is all in cherry, like the rest of the wood-finish of the church. The carving was done by Messrs. Ellis & Co. of New York, and is extremely well executed, varying in design with every capital. The cove of the cornice of the screen and that on the face of the pulpit are decorated in color by Messrs. McPherson & Co., and the screen is backed by crimson hangings.

The arches of the doorheads are filled with Venetian mosaic from Messrs. Salviati & Co. of London, who have also furnished a large panel for the tympanum of the main porch on Boylston Street.

IRONTON PRESBYTERIAN CHURCH. MR. JAMES K. WILSON, ARCHITECT.

This building is of pressed brick, and contains, besides the church proper, rooms for a Sunday school and an infant school. The auditorium of the church is a rectangle of about forty-five by seventy-five feet, the pulpit being placed in the centre of one of the long sides, and the whole opposite side being covered by a long vestibule or lobby, with a porch at either end. Six aisles radiate from the pulpit, and the pews are arranged concentrically around it. Against the end of the auditorium is built the Sunday-school room, forty-five by fifty feet. At the end of this, and separated from it by a screen or railing, is a smaller room for the infant school, the seats arranged in concentric semicircles.

HILLSBORO, O., TOWN HALL. MESSRS. E. ANDERSON AND CHAS. CROPSEY, ARCHITECTS.

Under the laws of the State of Ohio, incorporated villages, by a majority-vote, have the privilege of erecting buildings of this character by a general tax; and the Hillsboro, O., Town Hall is a fair sample of a class of buildings which are becoming quite numerous.

This structure is built of brick, with gray limestone and Buena Vista freestone. The roof is slated, and the large hall is finished with a fair proportion of open timbered work.

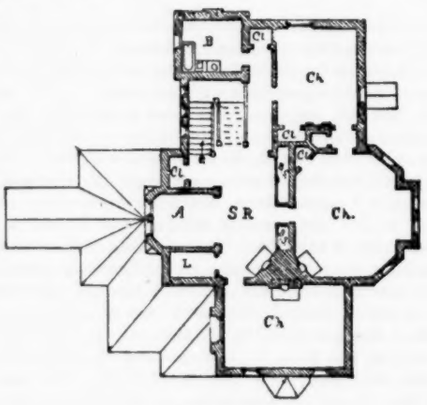
The dimensions of the building are one hundred and fifteen by fifty feet.

HOTEL AT PRINCETON, N.J. MESSRS. PORTER AND ROBERTSON, ARCHITECTS.

NOTE. — The plan of Mr. Jenney's house was received too late for insertion with the perspective view in our last number. We give it below, as interesting on account of some peculiarities in the arrangement. The references are as follows: —

FIRST STORY.

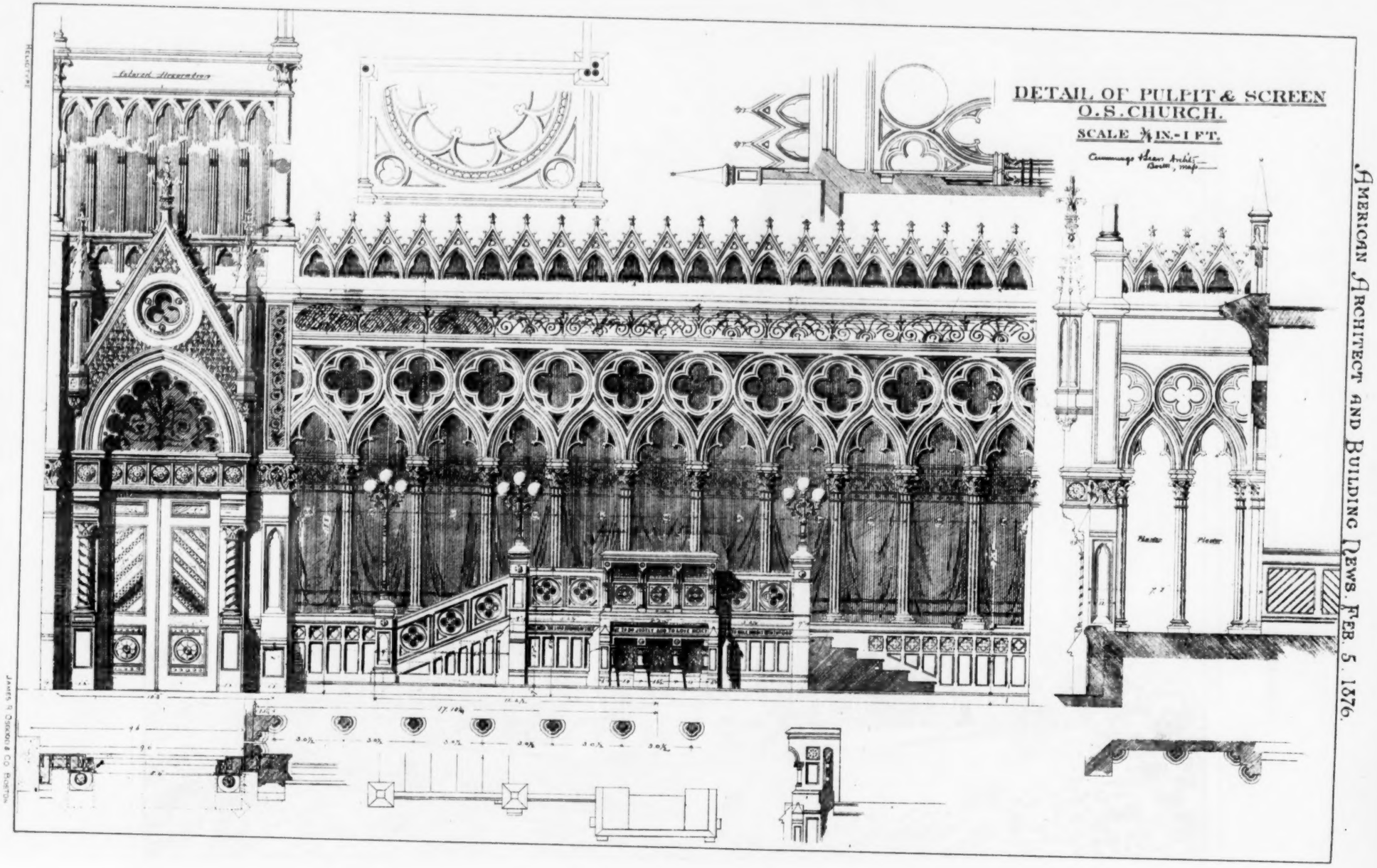
P., Parlor; D. R., Dining-room; L., Library; K., Kitchen; S. B., Servant's bedroom; V., Vestibule; P'. P'., Pantries; S.B., Sideboard; D., Desk; V'., Vault; T., Table; S., Seat; N., Niche; B. S., Book-shelves.



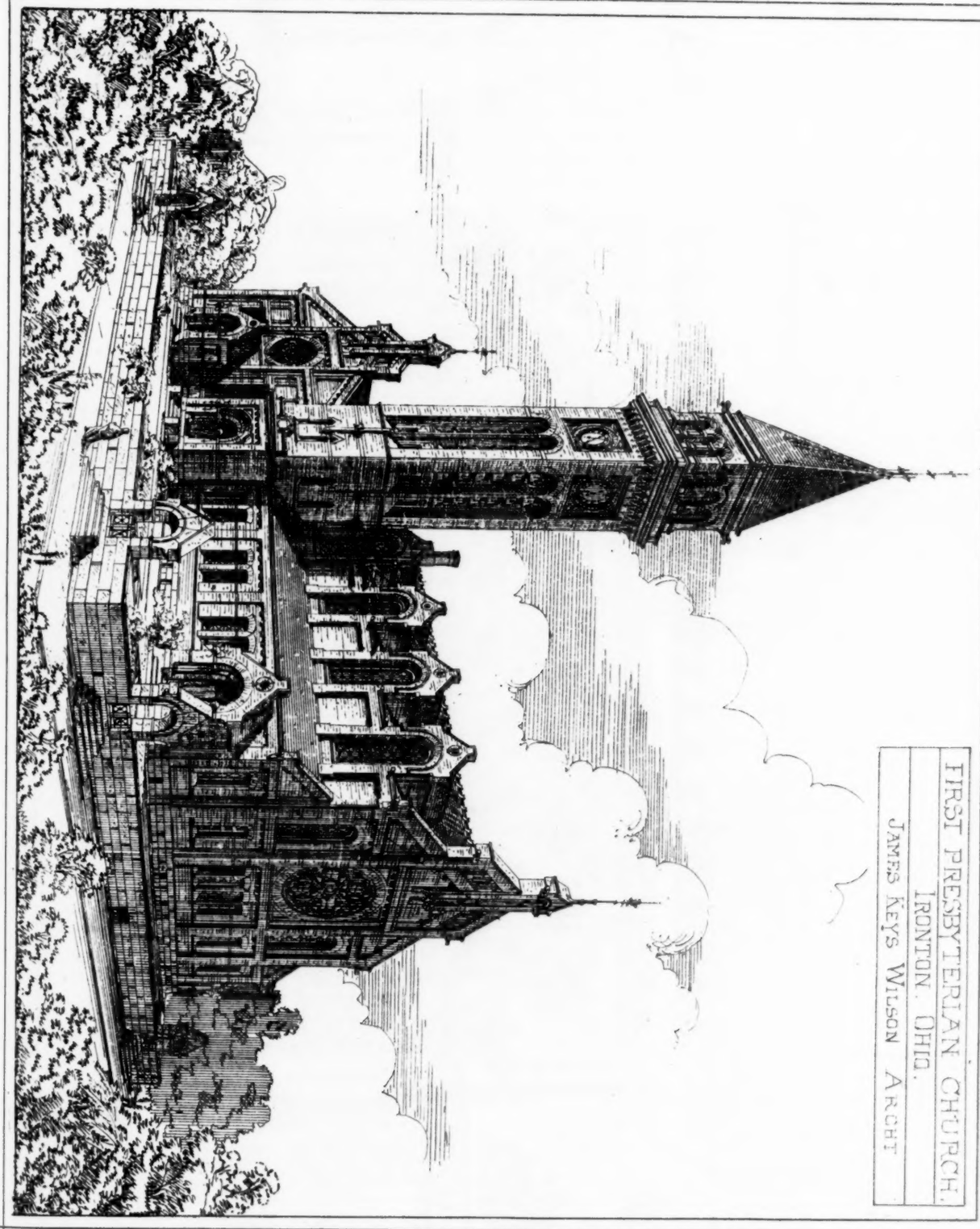
SECOND STORY.

Ch., Chambers; S. R., Sitting-room; A., Alcove; B. S., Bookshelves; L., Linen-closet; B., Bathroom; Cl., Closets.

MR. THOMAS BALL has been selected to furnish a model of a bronze statue of Josiah Quincy, the second mayor of Boston, which is to be placed in front of the City Hall, oppoite the Franklin statue.



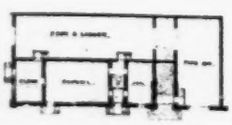
American Architect and Building News. Feb. 5 1876.



FIRST PRESBYTERIAN CHURCH.
IRONTON, OHIO.
JAMES KEYS WILSON ARCHT

HELIOTYPE

JAMES R. OSGOOD & CO. BOSTON



PHILLSBORO TOWN HALL

E. ANDERSON AND CHAS. GRAPSEY
ARCHITECTS

HELIOTYPE

JAMES R. OSGOOD & CO. BOSTON

Hotel at Princeton N.J.

Potter & Robertson Architects

HELIOTYPE

JAMES R. OSGOOD & CO. BOSTON

A FRENCH WORK ON ELEMENTARY DRAWING.[1]

IN right elementary drawing, two distinct kinds of exercise in line are essential; the purpose of the one kind being to train eye and hand to precise measurement and delineation of formal and symmetrical figures, the other to render the mind appreciative of those departures from mathematical formality which are the constant signs of life in natural forms, and to which they owe all their highest beauty. The first being comparatively mere eye and hand exercise, it is a question how far it may, with advantage, be carried on independently of the second. Like mere scale exercise in music, or like the memorizing of grammatical rules in the study of language, it has a tendency, if too long persisted in alone, to induce a mechanical habit. A mechanical habit in drawing is unfavorable to apprehension of essentially living and expressive qualities. Formal practice is, however, essential, and it would seem — though modern experience is as yet by no means mature enough to warrant the positive affirmation — that at least some degree of it should precede other exercise. Perhaps the best plan is to give exercises in drawing right lines and judging rectilinear and rectangular proportions first, and then to carry on the two kinds of practice collaterally, though giving chief attention and more time to the second, making the first alternate with it as a mere gymnastic.

That these two kinds of exercise are essential, has, indeed, been recognized in some degree in most of the popular works on elementary drawing which have been published in England, France, and America. But the nature and special function of each, and the line of separation between them, have not, as a general thing, been clearly apprehended; nor does any work as yet exist — so far as we know — in which a truly excellent series of examples in both kinds is presented.[2] As to the second and chief kind, there is as yet really nothing thoroughly good. But, as to formal discipline of hand and eye, it seems to us that the work under present consideration is very excellent, if not, so far as it goes, as good as can be; and this because the author confines himself strictly to the subject of the one kind of exercises, the limitations of which he clearly perceives and acknowledges. Thus he says, "*Les modèles donnés comme exercises dans cette méthode ne doivent pas être considérés comme modèles de dessin, mais comme pratique d'une gymnastique indispensable.*" There is no attempt to make pleasing patterns by combinations of formal lines. Much less are natural or other objects formalized. There are no "applied" curves or rosettes, — no candlesticks or shaving-mugs, bottles or barrels, — but it is all simple exercise in abstract mathematical line. It is true that the work is supplemented by an atlas in which "Chinese, Persian, Egyptian, Arab, Gothic," and other ornamental motives are worked out in a formal manner on squared paper. But this part of the work we do not approve; because (1st) it is not necessary to the intended discipline, and (2d) the patterns thus formed are not true to the originals, which are never mechanically precise, but always exhibit the inequality and vitality of freehand work.

But the exercises given in the text are confined to figures in plane geometry. They begin with the straight line, which is first to be drawn between ruled guiding lines, or on squared paper; then between two points placed in various positions; then with two points, beginning at a short distance before the first, the line is to be carried through both, and as far beyond the second as it started before the first. The straightness of the line is to be tested with the ruler, and corrected carefully till it is absolutely right. It is then bisected, trisected, and so on. Then come exercises in the eye measurement and drawing of angles, of quadrilaterals, &c., and of formal curves; each to be tested and corrected till it is "*tout à fait juste.*" The instructions as to care and accuracy, at whatever cost of time and patience, are in marked contrast with those too frequently given in popular treatises, — as, for instance, this given in a recently published work:[3] "To draw the vertical line, place a light dot on your paper representing the upper end, and another one corresponding with its opposite end; and, with the pencil point resting on the upper dot, fix your eye on the lower dot, and draw firmly and boldly from one to the other." Mr. Ottin says, "*Il est essentiel, en commençant, de faire ces exercises avec lenteur, afin de se rendre maître absolu de sa main. Jeter d'abord le trait à main levée ce serait livrer le succès au hasard. La promptitude arrive peu à peu avec l'habileté.*" The American would have his pupil work like a master at once. The Frenchman perceives that really to attain masterly power it is necessary first to take many slow and faltering steps.

The second part of the book treats of light and shade, the exercises given being substantially the same as those in the "Elements of Drawing." The pupil is first taught to lay a flat tint of any required depth, then to graduate a parallelogram from black to white. These exercises are to be practised with both point and brush. They are to light and shade precisely what straight and curved lines are to outline; and the pupil who has mastered them is sufficiently skilled in all formal precision.

[1] Méthod Elémentaire du Dessin. Par A. Ottin.

[2] Mr. Ruskin's Elements of Drawing, though in some minor points defective, does present a thoroughly excellent series of exercises in both these kinds, and clearly discriminates between them; but this cannot be classed among popular works.

[3] White's Progressive Art Studies. N.Y.: Ivison, Blakeman, Taylor, & Co.

THE BOOK OF AMERICAN INTERIORS.[1]

THE object of this book, as will be readily understood, is to help educate the public taste toward a richer and purer style of decorating and furnishing the two important rooms of a gentleman's house. By showing something of what has been done in this direction, it suggests the "go thou and do likewise," or better. Better than some of these it might not be easy to do; better than others, not difficult. The book is evidently intended not so much for the professional architect as for amateurs or gentlemen of wealth who are proposing to build or to renovate houses; and some of these may be saved by its suggestions from the blunders of overdone or tasteless decoration, so much worse than the simple bareness which at least makes no pretension.

We have views of six library-rooms and ten dining-rooms (including the great dining-hall of Harvard College). Beside these, there are two staircase-halls, a drawing-room, a china-room, a central hall, and a study. The prints are mostly heliotype copies from pen or washed drawings. They are unequally drawn, and not always accurately; some of them are far from doing justice to their originals. As representations they lose much, of course, by the absence of color, the introduction of which would have too greatly increased the cost of the book, already sufficiently large.

In the modern designs there is of course great variety in elaborateness and excellence, but, as they are private rooms, we shall not go into detailed criticism. The chimney-piece in Plate XV. reproduces that hooded form so finely picturesque in ancient houses. The purist may perhaps object that it no longer serves its original use or any use; that it is not even a "survival," but only a revival. In Plate IV. we have a feature at once picturesque and useful in the corner oriel, so common and so pleasing in Germany, and in a different shape in the Tyrol, but too rarely seen in this country. The furniture shown in most of the recently fitted rooms is of that solid, square style which, since the publication of Mr. Charles Eastlake's book, is popularly called by his name.

The text of the volume by Mr. Elliott consists of descriptions attached to most of the plates, and two preliminary chapters upon the library and the dining-room, in which he has introduced a good deal of incidental information not known to everybody, and some quaint woodcut illustrations from old books. It is, however, more a loose fabric of gossip and notions than the well-woven stuff which the title of the book would lead one to look for. A frequent carelessness of expression is noticeable, and some carelessness of statement: as where, on p. 71, certain columns are spoken of as Ionic, which the plate shows to be Corinthian; and on p. 98, where a portrait of Washington is said to be by Rembrandt. Perhaps Rembrandt Peale is meant. These slips can be corrected in a new edition: the more serious failings of the book are not so easily amended. The illustrations seem to be selected according to their acceptability to the author, more than from any representative character, and often do not show any sufficient warrant for their presence. If the article "the" in the title were replaced by "a," it would be more exactly descriptive, and less would be assumed; and if the book had been printed in duodecimo with illustrations correspondingly reduced, and at a price perhaps of three dollars instead of ten, it would have carried its contents with a better grace. In its present dress, its stately outside and imposing title make it rather a disappointment to the reader.

[1] The Book of American Interiors, prepared by Charles Wyllys Elliott from Existing Houses, with preliminary Essays and Letterpress Descriptions; Illustrated in Heliotype. Boston: James R. Osgood & Co., 1876.

THE *Ecole des Beaux Arts* is said to be fuller than ever before. One hundred and seventy-two students in architecture are entered, eighty in painting, and forty in sculpture.

THE EXHIBITION OF THE BOSTON ART CLUB.

The present exhibition of the Boston Art Club is in many respects one of the most satisfactory that has been held. Although the pictures by foreign artists are fewer and less important than has often been the case, those by native artists seem to us decidedly above the average.

The influence of the French school is especially noticeable in the growing breadth and manliness of treatment of most of our artists. At the same time there is a tendency with some to lose sight of the subtleties of Nature's moods, of the refinement and delicacy of drawing which is so essential to a just representation, and to give us instead an off-hand impression, which after the first glance has little to satisfy the mind. The whole tendency of the Boston school, however, is to a most healthy and truthful rendering of nature, with a sometimes over-rough but always strong handling.

Mr. Hunt, perhaps the head of this school, exhibits, besides two heads which are cleverly painted, though a little warm in the shadows, a landscape, No. 62. This, though uninteresting in subject, is treated with great breadth and feeling for nature, and looks much better at a greater distance than is possible in this gallery. But to us the most pleasing of Mr. Hunt's works were some charcoal drawings. One of a dog reminds one forcibly of Velasquez, No. 14. "Tired of Work," is a fascinatingly soft, furry pussy asleep on the knitting and spectacles of her mistress.

Mr. Inness has one strong and true study, No. 134, which is very characteristic of our autumn weather. His other pictures are less true, and are pervaded with, to us, disagreeable greens, especially No. 121, — Étretat, Normandy. His works of late do not seem worthy of his deserved reputation.

Most conspicuous, as well from position as from subject, are two pictures of Eastern subjects, by Mr. E. L. Weeks. They show great progress and a nice feeling for color, and are altogether so good that one cannot but the more regret a want of care in the drawing. No. 79, a caravan coming directly toward the spectator through an aqueduct, is well conceived and capitally grouped; but the heads of almost all the figures are too large for their bodies. The other is a scene in the desert, with a man and woman on camels, and an Arab boy on foot in advance, playing on a pipe. This is also good in color, but the camels' feet are badly drawn, and the outlines around the figures too black.

Mr. Gay has three charming pictures; two full of life and sparkle, and the other a quiet gray study of a quaint lighthouse in the midst of the sea.

There are several marine subjects, the best being by Norton, one of which, a vessel driving before the gale, is very fine in the management of grays. Two beach scenes, one by Mrs. Darrah, and one by Mr. Longfellow, show an interesting difference of treatment of a similar subject, one being bright and sunny, with charming pearly grays in the sky, but hardly enough drawing in the waves; the other with angry-looking waves hurling themselves in quick succession on the beach, which is all in shadow, while the sun is bursting through the clouds, and flooding the distant sea with light.

A blacksmith boy by Mr. Duverneck is, to our thinking, one of the best of this artist's studies we have seen. It is quite unfinished, with the exception of one eye, which is wonderful in elaboration. The whole character of the boy, however, is there, and no description of Dickens is better in its way.

Of pictures by foreign artists, a little snow scene by Cheim charmed us greatly, — nothing but a snow-wrapped village, with a half-hidden path leading to it over a bridge, a dull sky, no color anywhere except a faint indication of a red sun through the clouds, and yet a poem.

An unfinished work by Zamaçois is interesting as a fine picture in embryo. A small Jules Dupré in his early manner, and a farm scene by Morland, a deceased English artist, are both worthy of study; while a large semi-religious picture, "Charity," by Brüls, is feeble in the extreme. A waterfall, Norway, by Aug. Becker, shows some good drawing in the plunging water, and is a fair example of the German method; while a strong effort by Vertuni represents the Italian.

The exhibition of water-colors and charcoal-drawings shows a marked improvement. A head of a young girl by Miss Wales is very good in handling and in richness of color. The figure of a woman reading a book, by Martinetti, is a delightful example of the Italian manipulation, and an excellent study for our water-colorists. Miss Boott shows a very broad and truthful study near Beverly, and a bull's head which is very strong; also a delightful study in oils, which we forgot to mention, called January, — the setting sun touching on tree-trunks limned against the sky, while the snow spread below is in cool shade. Mrs. Darrah has a very good study in water-color of the interior of the Manchester woods, executed with all her dash and vigor. Of charcoal drawings, besides those already mentioned by Mr. Hunt, there are some very good landscape studies by Mr. Key; Nos. 4 and 7 being especially so, and, to our mind, more pleasing than his oil-paintings.

One word we should like to say about the hanging of the pictures; and that is, that as at present hung the lower row is totally obscured. Cannot this be remedied in future exhibitions?

CANADIAN NOTES.

Ottawa. — The works at the Parliament Grounds have been pushed on during 1875, to the extent of practically completing the "Square." The Parliament Buildings are modest Italian Gothic, artistic in treatment, but not planned with due thought for the northern climate they have to withstand. It seems also a fault that they are not adapted to the application externally of a high class of sculpture; and it would appear that a knowledge of this circumstance has influenced the choice of a design for the laying out of the grounds, submitted by Mr. Calvert Vaux of New York, showing much breadth of treatment. In advance of Mr. Vaux, Mr. Marshall Wood, an English sculptor, submitted a design adapted rather for a southern climate and ornate architectural surroundings. The grading, terrace, walls, and fencing, have to the present time cost rather more than $300,000, while something less than $200,000 additional will be needed to complete them.

The building to be used as Post Office, Customs, and Inland Revenue offices for the city, has just been completed under the superintendence and from the designs of Mr. W. Chesterton, architect. It is picturesquely situated, between Wellington and Sparks Streets, with its front on the base of a nearly isosceles triangle, the two other sides of which are formed by the convergence of Dufferin and Sapper's Bridges. The style is modified Italian. Cost, $165,000.

The Ontario Government have built at Ottawa a normal school costing $90,000, and a collegiate institute costing $50,000. Either of these is an ordinary stone building, made into popular Gothic by the addition of a few pointed arches.

Remaining works, worth noting, may be given thus briefly: New City Hall (in progress), Horsey & Sheard, architects, cost 70,000; Dominion Methodist Church (in progress), Horsey & Sheard, architects, cost $70,000; General and Supplementary Market Houses, Mr. Mather architect, say $45,000; and a large number of city residences, ranging from $2,000 to $15,000. Total for Ottawa, exclusive of government work, say $830,000.

Montreal. — Principal among the works now completing, is the new Post Office, costing $300,000. In style it is Italian, but an Italian with a strong French tincture.

Mr. N. M. Penault is the architect; and he is also joint architect with Mr. Alexander Hutcheson, for the new City Hall, — a building in course of erection, similar in point of style to the Post Office, and which will cost $500,000.

There is a competition for an Art Institute and Library, to be known as the Fraser Institute, to cost $100,000. Premiums of $400 (1st) and $100 (2d). Plans are to be sent in before Feb. 1, and under motto.

It is promised that all unsuccessful designs shall be returned to the owners without comment, and that no names excepting those of successful competitors are to be published. Designs to be Gothic. Instructions do not state who will judge as to which are Gothic, and which non-Gothic.

It appears that the necessary funds for this purpose were furnished by a legacy from one John Fraser, whose natural heirs are at present seeking to recover, by legal means, the right to this money which Mr. Fraser's will has dispossessed them of.

Toronto. — A new Custom House, costing $200,000, has just been completed in this city. It is Italian in character. Mr. R. C. Windeyer of Toronto is the architect. The stone carving is noticeable, showing delicacy, variety, and contrast, in a marked degree. The carver, Mr. Mowbray, originally held a like position at the building of the Foreign Office, London, England.

Immediately in rear of this building is the Customs Examining Warehouse, now in course of erection from the designs of Mr. Irving of Toronto. Probable cost, $200,000.